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Agricultural Census in Myanmar

Country Report, Presented by Myanmar participants in (APCAS/10/1)

- Participants: (1) U Kyaw Nyein Aung
Deputy Director
Settlement and Land Records Department
Ministry of Agriculture and Irrigation
- (2) U Myat Thu Wai
Assistant Director
Settlement and Land Records Department
Ministry of Agriculture and Irrigation

Introduction

Before 1988, agricultural policy of Myanmar could be depicted as rigid and controlled and subsidized policy that highly emphasized on domestic food security and stability of price. After the economic transition from planned economic system to market-oriented economic system in 1988, agricultural policies of Myanmar pay attention on boosting production and promotion of agricultural exports. The Government considers agriculture "*as the base for all-round development of other economic sectors*". The three major objectives of the agriculture sector are: (i) to achieve surplus in paddy production; (ii) to achieve self-sufficiency in edible oil; and (iii) to step up the production and export of pulses and industrial crops. At the same time, within the context of market-oriented economic system, freedom in agricultural production, and participation of private sector have become the major policies in the agriculture sector.

Myanmar is traditionally an agricultural country and agriculture sector remains as a major contributor to GDP, and its share of export earnings is about 40%. At the same time, agriculture sector provides employment to more than 60 per cent of work force. In addition, food security for the people and raw material production for domestic agro-based industries are heavily dependent on the agricultural sector.

For future prospect, Myanmar set up the millennium development goals targeting 2015 and significant progress has been achieved in various sectors including agriculture. Major issues on the future development of agriculture sector are regional food security, extension of agricultural land, enhancing participation of private entrepreneurs in agricultural activities, income generation activities through introducing new crops, and encouraging farmers to cultivate environmental friendly crops.

General Situation on the Agricultural Statistics in Myanmar

Concerning with the statistical activities for agriculture and non-agriculture sectors, the government of Myanmar has laid down the Central Statistical Authority Act of Myanmar: 1952 for backing up the activities of statistics with the legal support. The statistical act of Myanmar has been applying for all statistical activities including agricultural statistical activities.

Organizational Structure for data collection in agricultural sector in Myanmar is quite different from the other productive sectors. Significant features related to the productive activities depend on changes in the seasonal pattern or weather conditions. Seasonality can have serious impact on food production. The elongated shape of the map of Myanmar is a natural advantage; the northern most part of country experiences low temperature and the temperature rise until it reaches the southern part. A major portion of country enjoys a tropical climate. At the province level, Myanmar is administratively divided into 17 States/Divisions. The States/divisions are sub-divided into 64 districts which are further divided into 324 townships. The townships are again subdivided into 13,759 village tracts. The basic administrative unit in Myanmar is the village tract and is administrated by a committee which is directly supervised by township Peace and Development Council. Most of the statistics in Myanmar represent those administrative regions.

Since the lowest administrative unit is the village tract, statistics are collected usually on that basis. The village tract Peace and Development Council is an integral part of the agricultural statistics system and it has to give necessary assistance to the staffs of other agricultural related agencies, such as SLRD, MAS, LBVD, DOF, in the collection and compilation phases of information and keeping records for the village tract. Myanmar has therefore a very closely knit structure of local administrative system. This network helps in coordinating statistical activities at the local level and ensures close cooperation between farmers and government agencies. The government statistical agencies of Myanmar are systematically formed by the field staffs that have thorough knowledge of local climate, farming systems and crop technology and also they are familiar with the local people and their customs as well.

Nevertheless National agricultural statistics system of Myanmar can be defined as a decentralized system with minimum coordination with other concerned departments and ministries. Each ministry has its own statistical unit to serve its own needs either through the survey method or as a by-product of administration.

Major Agricultural Statistical Agencies

There are several statistics agencies for collecting, compiling and disseminating of economic and social statistics in Myanmar. Some major statistics agencies related to the agriculture sector of Myanmar are as follows:

(a) Central Statistical Organization (CSO)

Central Statistical Organization (CSO) under the Ministry of National Planning and Economic Development, is a sole national statistics organization which mainly emphasized on economic and social statistics of Myanmar.

(b) Planning Department (PD)

Planning Department under the Ministry of National Planning and Economic Development is taking responsibility to measure the growth of national economy including agriculture sector.

(c) Livestock Breeding and Veterinary Department (LBVD)

Major role of the Livestock Breeding and Veterinary Department under the Ministry of Livestock and Fisheries is to collect, compile and disseminate the livestock production statistics of Myanmar.

(d) Department of Fisheries (DOF)

Department of Fisheries is one of the department under the Ministry of Livestock and Fisheries, major statistics disseminating in DOF are production from freshwater and marine fisheries and volume and value of exports.

(e) Other Agricultural Related Government Agencies

Department of population under the Ministry of immigration and population has highest responsibility for conducting population censuses and demographic surveys, estimating and publishing national, states/divisions population figures and urban/rural population figures of Myanmar. Another important department for preparing agricultural statistics is Department of Labor under the Ministry of Labour. Department of Labor also

conducts labor force surveys and disseminates agricultural labor force statistics through the various statistics reports.

(f)Settlement and Land Records Department (SLRD)

Settlement and Land Records Department (SLRD) is sole government department taking highest responsibility for collecting, compiling and disseminating agricultural statistics, particularly for production statistics, such as planted area, harvested area, yield and production of crops, in Myanmar.

In addition the Settlement and Land Records Department under the Ministry of Agriculture and Irrigation is taking responsibility not only for the crops statistics but also for the statistics on the land use and land management. In order to get the complete and reliable statistics, SLRD always keep the close relation and collaboration with the relevant departments and ministries.

Another important task of SLRD is conducting agricultural censuses. Since Myanmar gained its independence in 1948, three agricultural censuses (1952, 1993 and 2003) have been conducted by the SLRD and now preparing to conduct 2010 agricultural census.

Agricultural Census in Myanmar

The first agricultural census of Myanmar after independence was launched in 1952 based on the guidelines of World Census of Agriculture 1950. Since the Myanmar Census of Agriculture 1952 was conducted as soon as after regaining independence and weakness in national stability and security, the data could not be compiled on the nationwide scale. Therefore, arrangements had been made to collect and compile the data through phases for three consecutive years. The method applied in the Myanmar Census of Agriculture 1952 was Multi-stages census. In the first stage enumeration of the census had been launched in 252 townships for urban areas and, in the second stage, 2143 village-tracts were included in the enumeration of census.

Although the international standard prescribes that the Agricultural Census should be carried out every 10 years, Myanmar had not been in a position to implement such plans through decades after finishing of Myanmar Agricultural census 1952. In addition, despite the decision of Settlement and Land Records Department for conducting Myanmar Agricultural Census in 1980 and 1990, they were not realized due to various reasons. With the permission, dated May 11, 1988, from the Union of Myanmar Cabinet Meeting No. 4/99, the agricultural census and strengthening of the system of agricultural statistics was approved. According to the permission, the 1993 Myanmar Agricultural Census was launched with the financial assistance of US\$ 2.19 million by the United Nations Development Programme (UNDP) and Food and Agriculture Organization (FAO). Additionally, the Government of the Union of Myanmar provided 45.05 million kyats for the implementation of Myanmar Census of Agriculture 1993.

The Myanmar agricultural Census 1993 covered 272 townships out of the 319 townships of 14 States and Divisions. The urban wards in Yangon and Mandalay Divisions, remote areas and less-populated insecure areas were excluded from the enumeration of the census. The method applied in the Myanmar Agricultural Census 1993

was sampling technique with the UNDP/FAO technical support. The data were compiled for each state, division and Union level and reported in 1995.

The third agricultural census of Myanmar was launched in 2003 according to the guidelines of the FAO's World Census of Agriculture 2000 programme. Settlement and Land Records Department under the Ministry of Agriculture and Irrigation took responsibility for conducting Myanmar Agricultural Census 2003. Since WCA2000 guided to include aquaculture holdings in the implementation of agricultural census, information concerning livestock, fisheries and aquaculture were also collected. Myanmar Agriculture Census 2003 was carried out using complete enumeration method so that the result of census will provide the most important and basic information for formulation of future development plans and measures. Since the Myanmar Agricultural Census 2003 was conducted in complete basis, enumeration of census covered the entire country except highly urban areas, some remote areas where transportation facilities were not good enough to conduct the enumeration. At the time of census, there were 9 States and 8 Divisions with 63 districts, 324 townships, about 12,900 village tracts and about 58,000 villages in the Union of Myanmar. However, of the 324 townships, only 283 townships were included in the census.

In the implementation of the Myanmar Agricultural Census 2003, FAO provided 297,000 US\$ as an assistance under the Technical Cooperation Programme (TCP/MYA/2801) only for preparation of the Myanmar Agricultural Census. Therefore, all expenses for the implementing, processing and disseminating of the Myanmar Census of Agriculture were used by the own budget of the Settlement and Land Records Department. Before the final Report on the Myanmar Census of Agriculture 2003 was published in March 2007, Advanced Report on the Myanmar Census of Agriculture 2003, which was based on the 20% of the collected information, was disseminated in 2005.

Myanmar Census of Agriculture 1993

The 1993 Myanmar Census of Agriculture was conducted using both method of sampling as well as the method of complete enumeration. The choice of a specific technique and the selection of sample holdings, in practice, involved two distinct phases:

- (i) a sampling technique was applied to those townships with a high concentration of (household-based agricultural) holdings operating less than 50 acres, and
- (ii) a census type or cent percent enumeration of all holdings operating 50 or more acres, and non-household based special holdings under the management of cooperatives, state enterprises, and non-household unit such as monasteries and churches.

The basic sampling technique used was of a stratified two stage sampling and applied the township level. Every township was divided into a number of Enumeration Areas (EAs) that contain between 50 and 200 households, and those EAs were further grouped into a number of strata.

Accumulated information in the 1993 Myanmar Census of Agriculture was:

- (1) Agricultural holdings
- (2) Sex, age, work status and educational attainment of Holders

- (3) Employment of agricultural workers
- (4) Use of machinery and equipment
- (5) Use of fertilizers, pesticides, HYV seeds
- (6) Irrigation
- (7) Land Type
- (8) Crops grown (annual and permanent), and
- (9) Livestock

The census operation was initialized in September 1990; the sampling, preparation recruitment and training of field staff took two years and the actual enumeration was carried out in 1993 from February to April 11. The report on Myanmar Census of Agriculture, 1993 was published in 1995.

Myanmar Census of Agriculture 2003

Myanmar Census of Agriculture 2003 (MCA 2003) is part of the World Census of Agriculture 2000. The Census of Agriculture undertaken in 2003 had included the recommended items under FAO's Programme of the World Census of Agriculture 2000 that are relevant to the country. In the World Census of Agriculture Programme 2000, FAO advocated the inclusion of fisheries activities on the holding. Because of the importance of fish and fishery products in the diet of the Myanmar people, MCA 2003 had included also the fishing activities of all household members of agricultural holdings not only on the holding but also off the holding. In addition, aquaculture farming was also included as well as commercial livestock and poultry raising.

The methodology in undertaking the Myanmar Census of Agriculture 2003 was complete coverage of all holdings in the country. A listing operation was conducted in all townships except in highly urbanized areas of Yangon Division to identify the agricultural holdings. The listing was conducted from March 16, 2003 to August 15, 2003. Since aquaculture, commercial livestock and poultry establishments were also included in the census and may not be covered in the household listing operation, a list of those establishments were furnished by the cooperating departments: the Department of Livestock and Veterinary and the Department of Fisheries. The census enumeration started on October 1, 2003 and completed nationwide on November 15, 2003. Reference year for conduct of the Myanmar Census of Agriculture 2003 was 2002/03 agricultural year of Myanmar started from 1st April, 2002 to 31st March 2003.

The data processing of the 2003 Myanmar Census of Agriculture was a very large and complex undertaking. In anticipation of the volume of questionnaires to be processed because of the complete coverage of all holdings in the country, five processing centers that were strategically located were set up. Each center was equipped with electronic computers and computer operators to encode the data.

Information covered in The Myanmar Census of Agriculture 2003 was:

- (1) Numbers and Total and Area of Holdings
- (2) Land use of the holdings
- (3) Land Fragmentation
- (4) Size of Land Holdings
- (5) Intensity of Land Use and Cropping Practices
- (6) Annual or Temporary Crops grown

- (7) Permanent Crops grown
- (8) Irrigation facilities
- (9) Livestock
- (10) Fishing and Aquaculture
- (11) Farm Machinery and Equipment
- (12) Improved Farm Practices
- (13) Hired Labor
- (14) Legal Status of Holder
- (15) Demographic Characteristics of the Holder
- (16) Purpose of Production
- (17) Farm Activities and Time Spent Working on the Holding
- (18) Main Source of Income of the Household Holder's
- (19) Environmental Problems Encountered in 2003
- (20) Demographic Characteristics of Farm Population
- (21) Activity Status of the Farm Population, and
- (22) Gainful Occupation

The Report on Myanmar Census of Agriculture 2003 for Union level was prepared based on the results acquired from the conduct of Myanmar Census of Agriculture 2003 and published in March 2007.

Subject related to 2010 Myanmar Census of Agriculture

By participating the FAO's World Census of Agriculture 2010 round, Settlement and Land Records Department has planned to conduct the Myanmar Census of Agriculture in 2010. According to the guidelines of WCA 2010, 16 core modules and 89 supplementary modules are suggested to implement in agricultural census in 2010 round. FAO also guided that 16 core modules should be done in complete basis and additional supplementary modules should be conducted by sampling method. Since Myanmar has already conducted its Myanmar Census of Agriculture 2003 using complete enumeration method, data and information obtained from 2003 could be applied as a frame for 2010 Myanmar census of agriculture. In addition, in order to be in line with the guideline of the FAO's World Census of Agriculture 2010, Settlement and Land Records Department has decided to conduct the agriculture census in 2010 using Complete Enumeration Method for collecting Core Items and applying sampling method for necessary supplementary items.

Myanmar Census of Agriculture 2010 is being conducted to get the following information:

- (1) Identification of Holding and their household size
- (2) Legal status of holders
- (3) Sex and age of holders
- (4) Educational attainment of holder
- (5) Economic activities of holders
- (6) Land use
- (7) Irrigation
- (8) Crop
- (9) Agricultural practices

- (10) Agricultural Services
- (11) Livestock
- (12) Fishing and Aquaculture
- (13) Farm labor
- (14) Demographic characteristics and gender issues

Period of the Census Project is 4 years starting from July 2008 to June 2012. The project focus on entire works of the Census including preparation of the Project, compiling equipments and materials, finding international assistance, budget allocation, recruitment of enumerators and the Project Staff, training for enumerators and supervisors, conducting pilot census, implementation of the core and supplementary censuses, developing programs for data processing, editing and data checking, conducting post-enumeration surveys, evaluation of the Project and Printing and publication of census reports for both core and supplementary censuses.

In order to be in line with the guidelines of FAO for World Census of Agriculture 2010 and to follow the work plan, implementation of the list frame with the collection of Core Census modules data has successfully conducted in Myanmar during February 2009 to May 2009. The implementation of the list frame with the collection of Core Census modules data has been carried out using complete enumeration method and covered the whole country except some remote areas and highly urbanized areas. The report for the Core Census data of Myanmar is planned to publish at the end of the year 2010.

Supplementary Modules will be conducted during November and December 2010. Final reports for Union and each of the state/division will be published in mid-2012. Detail work plan will be prepared at the start of the Project by the National Project Director in consulting with the member of National Census Technical Committee and international and National consults and experts. **Work-plan is attached in Appendix A.**

Implementation of the list frame with the collection of Core Census modules data in Myanmar

For the participation of the World Census of Agriculture 2010, FAO recommended the countries to conduct the agricultural census according to the guidelines so that comparative analysis could be done among the countries. According to the guidelines of the World Census of Agriculture 2010 for the implementation of Core Module, there are 16 items that should be done by complete method.

However, Settlement and Land Records Department (SLRD) under the Ministry of Agriculture and Irrigation of Myanmar, decided to conduct the surveys for 11 items in the core census. SLRD decided not to include in core census for remaining 5 items because some items recommended by FAO, such as “Presence of Irrigation on the holdings”, “Types of temporary crops and permanent crops on the holdings”, etc., are being surveyed annually using complete method by SLRD.

The listing of households conducted by SLRD in early 2009 enumerated a total of 57,911 villages consisting of: 2,375 blocks and sub-blocks, 53,606 villages and 1,930 scatter areas. Sketch maps for these areas were also prepared. Considering that one of the reasons for conducting a census is to provide micro level structural information, all these 57,911 listed villages will be covered in the Myanmar Census of Agriculture 2010. In

addition, non-household operated and specialized holdings will likewise be covered. The sampling frame for this group will come from the registers regularly updated by concerned line agencies of Government of the Union of Myanmar.

The same household listing also counted 3,235,758 crop holdings, 3,752,035 livestock and poultry holdings and 20,094 aquaculture holdings. There are overlaps in this classification and the extent of the overlap is still dissecting while more detailed breakdown of the holdings in the household listing is still computerizing. It is expected to be finished by April 2010. It is also noted that the listing of household did not include any question on fisheries or household fishing activities. In the event that the stakeholders formally recommend the inclusion of a fishery module in the Myanmar Census of Agriculture 2010. SLRD assured that it could make available the 2003 listing of fishing communities as a reference. The Department of Fisheries also stated that it has a list of fishing areas.

The Myanmar Census of Agriculture 2010 will cover household-operated, non-household-operated and specialized holdings. Landless and marginalized agricultural households will also be covered as this group is among the vulnerable population with respect to food insecurity and poverty. Moreover, to ensure proper coverage of the holdings, large holdings (crops, livestock and aquaculture) should be completely enumerated. or small and medium sized-holdings, sample holdings should be drawn from each village.

It is also important to cite here that the operations of the Myanmar Census of Agriculture 2010 will not be completely donor-dependent. The Government of the Union of Myanmar has already appropriated 2,640 million Kyats (about 2.4 million USD) for budget years 2009-2012 to support the programmed activities for MCA 2010. The budgeted amount however, is mainly intended to support routine costs for the census operations. It does not cover developmental and support costs like (a) advocacy and awareness campaign; (b) intensive training programmes for the supervisors and enumerators; (c) data processing; (d) analysis, report writing and dissemination and (e) equipment to support data processing, printing and reproduction and enhanced mobility of the enumerators and supervisors, and use of paperless survey questionnaires as an alternative to reduce sampling errors and enhance data processing.

The successful implementation of the Myanmar Census of Agriculture 2010 will depend to a large extent on how well the human resources are primed and trained to do this large scale data gathering. The number of personnel required to be fielded to interview sample respondents depends on the size, scope and geographical coverage of the survey. As earlier stated, 57,911 villages will be enumerated. With the flexibility and sophistication that may be exercised in the implementation of the supplementary census modules, it is envisaged that about 600,000 holdings, more or less, may be taken as the total sample respondents.

SLRD has committed to make available 7,706 field staff for the MCA 2010. Of this number 5,877 will be designated as enumerators. Using the given number of enumerators and using a field supervisor: enumerator ratio of 1:5, 1,179 field supervisors will be needed. Providing a 2.5% reserve/back-up field staff, a total of 7,229 workforces is envisaged to be tapped. With this field strength, and an assumption that a census enumerator can interview maximum of 6 households a day, 52 fieldwork-days will be

needed to cover 600,000 sample holdings. With this estimated size of the field-force, it is need to make an effective training of enumerators and field supervisors.

The quality and rigidity of field supervision is also a big factor in attaining a well executed data collection process for the census enumeration. SLRD realizes the importance of this phase of the field operation. It has indicated its willingness to make available the services of the following personnel for supervisory activities:

State/division level – 15

District level – 85

Township level – 211

Village tract level - 452

However, in estimating the number of villages that these supervisors may be able to visit during actual field enumeration, it was assumed that each higher level supervisor (above the enumerators' field supervisor) will be able to visit minimum of 2 villages a day. Given this benchmark, these 763 supervisors should be able to visit 60,347 villages. Thus if the field supervisors do their job properly, and the higher level of supervision is properly programmed, each village would be visited by a minimum of two supervisors.

For this 2010 decennial round, SLRD has officially requested technical assistance from FAO to ensure that its MCA 2010 is done in full conformity with the WCA 2010 Programme. While SLRD's core group who were involved in the 1993 and 2003 MCA are more or less still intact, no one among them however has the expertise to follow the WCA 2010 recommendations, particularly in the area of sampling design, questionnaire preparation, analysis, report preparation and dissemination. Moreover, many are retiring few years from now and capacity building is urgently needed for the incoming and younger staff.

Conclusion

Although SLRD had three decennial rounds of census of agriculture experiences behind it, it still feels inadequate to carry out on its own the 2010 round of the WCA for good reasons. Unlike earlier WCA rounds, the WCA 2010 advocates that this round of census undertaking should follow a system of integrated censuses and surveys. It recommends the use of modular approach to the census operations: a core module of 16 structural items to be carried out on a complete enumeration basis and supplementary modules to be conducted on a sample basis. In addition, WCA 2010 also advocates the development of a programme for agriculture surveys to cover more in-depth the suggested thematic modules.

These new thrusts provide a great challenge for many national statistical systems. Unfortunately while Myanmar has a core of determined statistical operators, It does not have the requisite pool of statistical professionals who can satisfactorily handle the advocacies recommended in the WCA 2010 Programme. In particular, SLRD needs assistance in sampling design, planning and developing census instruments for the supplementary modules, facilitating data collection, data processing systems, analyzing census results, preparation of census reports, etc., hence the need for the FAO and

International community to provide technical assistance to ensure that the MCA 2010 are carried out in full conformity with the WCA 2010 Programme.

Myanmar is now trying very hard to achieve growth and development with momentum in antenatal economic life, although, Myanmar's economy is still mainly relied on the agriculture sector and the majority of the population is rural based. Hence, Myanmar pays special attention for all-round development of the country based on agriculture sector and development of other agriculture sector as well.

Due to its resources constraints and the present situation of agriculture statistics of Myanmar, international collaboration programs are welcome for the assistance and improvement for the development of accurate and timely. Myanmar will actively take part in the formulation of those activities to make rapid achievement on the welfare and well being of the nation and on the other hand for the improvement of the agricultural system.